

REEL #27  
ROKHLINA, M.M.

UDC 51.621.391

USCR

ROKHLINA, M. M.

"Circuits Increasing Reliability"

Probl. Kibernetiki [Problems of Cybernetics -- Collection of Works], No. 23, Moscow, Nauka Press, 1970, pp 295-301 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V475).

Translation: Suppose  $E_{\mu}$  is a functional element realizing the function  $a$ , p. 79

Circuits are constructed of elements  $E_{\mu}$  which correct a certain number  $r$  of errors in a certain sense and are minimum in the class of circuits without branching of outputs (that is in the class of superpositions). An effectively defined sequence of functions is presented, allowing only complex realization of formulas in the base consisting of one function  $h_{\mu}$ .

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1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--USE OF GAMMA RESONANCE SPECTROSCOPY TO STUDY COORDINATION IN  
SOLUTIONS OF ORGANOTIN MONOHALIDES -U-  
AUTHOR--(05)-GOLDANSKIY, V.I., ROCHEV, V.YA., KHRAPOV, V.V., KRAVTSOV,  
D.N., RUKHLINA, YE.H.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKADE. NAUK SSSR 1970, 191(1), 134-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--MOSSBAUER EFFECT, ORGANOTIN COMPOUND, COORDINATION CHEMISTRY,  
POLYNUCLEAR HYDROCARBON, HALIDE, CRYSTAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/0017  
CIRC ACCESSION NO--AT0125857  
STEP NO--UR/0020/70/191/001/0134/0137  
UNCLASSIFIED

PROCESSING DATE--13NOV70

UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--AT0125857  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE NOESSBAUER EFFECT WAS USED TO STUDY THE COORDINATION OF PH SUB3 SNF, PH SUB3 SNCL, PH SUB3 SNBR, PH SUB3 SNI, AND THEIR ET AND ME ANALOGS IN SOLVENTS SUCH AS HEPTANE, ET SUB2 O, CHCL SUB3, PYRIDINE, TETRAHYDROFURAN, ME SUB2 NCHO, ME SUB2 SO, (CH SUB2 GME) SUB2. THE SPECTRAL CHARACTERISTICS ARE TABULATED. COORDINATION WAS DETECTED FOR THE ORGANOTIN HALIDES IN STRONGLY SOLVATING SUBSTANCES AND COORDINATION WAS OBSERVABLE IN CRYSTALS IN THE INDIVIDUAL SUBSTANCES. THIS WAS CAUSED BY THE FACT THAT IN PASSAGE FROM INDIVIDUAL HALIDES TO THEIR SOLNS. IN STRONGLY SOLVATING SOLVENTS THE CHANGE IN QUADRUPOLE SPLITTING IS DETD. BY THE DIFFERENCE IN INTENSITY OF COORDINATIONAL INTERACTIONS IN THE CRYSTALS OF THE INDIVIDUAL SUBSTANCE AND ITS SOLN. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--RESONANCE REGISTRATION OF COBALT-57 GAMMA QUANTA -U-  
AUTHOR-(03)-MITROFANOV, K.P., PLOTNIKOVA, M.V., ROXHLOV, N.I.  
COUNTRY OF INFO--USSR  
SOURCE--PRIB. TEKH. EKSP. 1970, (2), 75-6  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY  
TOPIC TAGS--QUANTUM RESONANCE PHENOMENON, COBALT ISOTOPE, GAMMA QUANTUM,  
ABSORPTION SPECTRUM, GAMMA COUNTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3007/1063

STEP NO--UR/0120/70/000/002/0075/0076

CIRC ACCESSION NO--AP0136483

UNCLASSIFIED

PROCESSING DATE--04DEC70

UNCLASSIFIED

2/2 033

CIRC ACCESSION NO--AP0136483

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. PARAMETERS ARE GIVEN OF A  
RESONANCE COUNTER FOR REGISTRATION OF PRIMEST CO GAMMA QUANTA WITHOUT  
RECOIL. THE ABSORPTION SPECTRUM OF THE COUNTER IS A SINGLE LINE. THE  
COUNTER IS COVERED WITH 70PERCENT FE PLUS 20PERCENT NI PLUS 10PERCENT  
CR. THE REGISTRATION EFFICIENCY FOR RESONANCE GAMMA QUANTA EQUALS  
SIMILAR TO 15PERCENT, THEIR COUNT EXCEEDS THE NOISE LEVEL TENFOLD.  
FACILITY: NAUCH.-ISSLED. INST. YAD. FIZ., MOSCOW, USSR.

UNCLASSIFIED

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USSR

ROKITSKIY, P., Academician, Academy of Sciences Belorussian SSR, and MOSSR. I.,  
Candidate of Biological Sciences

"How Can Heredity Be Protected?"

Minsk, Sovetskaya Belorussiya, 21 Jun 70, p 4

Translation: The radioprotective effects of amino-substituted indenes were discovered at the Institute of Genetics and Histology, Academy of Sciences Belorussian SSR. These compounds were synthesized at the Institute of Organic Synthesis of the Academy of Sciences Latvian SSR. They are nontoxic, penetrate tissue easily, and readily form complexes with DNA molecules. Most important, it is much easier to stimulate indene compounds than DNA molecules.

The assumption has been made that indene compounds are able to diffuse into gonadal cells, settle on chromosomes, form temporary complexes with DNA molecules and, due to their high excitability, take over the energy from irradiated DNA molecules.

The tests seem to confirm the hypothesis. Amino-substituted indenes are pigments of bright or dark red color. Due to this property, it has been established that they penetrate the testicular tissue of animals. The

USSR

ROKITSKIY, P., et al, Sovetskaya Belorussiya, 21 Jun 70, p 4  
experiments were done on the geneticists' classic experimental object -- *Drosophila*, which was fed the test compound with its regular food.

In their chemical structure, indene compounds markedly differ from other, well-known radioprotective compounds, which lower oxygen tension in tissues and accept secondary radicals that are formed during irradiation. On the contrary indenenes directly protect chromosomes from the direct effects of radiation.

Comparing the radioprotective effects of various substances with their chemical structures, it was established that the heavier and more branched the molecule is, the smaller is its radioprotective effect. Evidently, the branchings prevent the molecules from affixing themselves to the genetic material, and this is why their effectiveness drops. In other words, to become protective, indenenes must reach the DNA. When they do, they form temporary complexes with DNA molecules. What role do these complexes play?

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USSR

ROKITSKIY, P., et al, Sovetskaya Belorussiya, 21 Jun 70, p 4

The effects of amino-substituted indenes on two types of radiation lesions were studied: slight chromosome damage and major chromosome restructure. The mechanisms by which these two mutations take place are different. However, the frequency of their occurrence in the presence of indene compounds decreases 50-80 percent in both cases. Evidently, indenes do not interfere in the process which leads to radio-mutations, but protect chromosomes, either by preventing the radiation energy from reaching them, or by taking the energy over from the DNA before irreversible changes -- mutations -- have taken place in it.

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UDC 575.24

USSR

ROKITSKIY, P. F., MOSSE, I. B., KAMINSKAYA, E. A., and FREYMANIS, Ya. F.  
"Study of the Protective Effect of Indene Compounds Against the Genetic Effect of Ionizing Radiations"

Minsk, Voprosy Genetiki i Selektzii (Aspects of Genetics and Selection),  
"Nauka i Tekhnika," Minsk, 1970, pp 303-304

Translation: The protective properties of aminated indenenes specially synthesized at the Institute of Organic Synthesis of the Academy of Sciences Latvian SSR were investigated. It was established that seven of the compounds reduce the frequency of recessive lethal mutations induced in Drosophila by gamma-irradiation by 50-80 percent, and that five of the compounds diminish the level of chromosome reconstructions induced by X-ray irradiation by 50-75 percent.

Certain differences in the protective capacity of the indene preparations when used in combination with normal X-rays and high energy radiation were noted; for example, at a relatively high degree of protection from X-ray irradiation (180 kilovolts) the protective effectiveness of the preparations is reduced

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USSR

ROKITSKIY, P. F., Voprosy Genetiki i Selektzii (Aspects of Genetics and Selection), "Nauka i Tekhnika," Minsk, 1970, pp 303-304

during X-ray bremsstrahlung and is completely absent in most of the indene compounds in irradiation with electrons with an energy of 42 Mev. The possible mechanisms of the genetic effect of the preparations studied are discussed.

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UDC 629.78.018.1(088.8)

USSR

BOROG, V. A., SANKOV, Ye. I., ROKITYANSKIY, R. I., SOSUL'NIKOV, I. L.,  
TSVETKOV, Ye. A.

"Installation for Creation of an Air Stream"

USSR Author's Certificate No 309268, filed 20/05/66, published 3/09/71,  
(Translated from Referativnyy Zhurnal, Raketostroyeniye, No 2, 1972,  
Abstract No 2.41.132 P from the Resume).

Translation: This invention relates to equipment for aerodynamic research, namely installations for the creation of an air stream. Installations for the creation of an air stream are known, containing a platform and a non-moving cover installed on the platform, forming an air channel together with an attached shaped nozzle fixed relative to it, in which there is a motor with a fan and a guiding grid. These installations do not allow aerodynamic loading of individual units of an assembled aircraft at various levels and at an angle to its primary planes. The installation suggested for the creation of an air stream differs from known installations in that the cover is fastened to the platform by hydraulic lifters allowing it to be moved forward and backward and rotated by a fixed angle in the vertical plane. Furthermore, the end portion of the cover is made with guides which rotate the attached nozzle around the axis of the air channel, while the device for fixation of the nozzle relative to the cover is equipped with a hydraulic drive. 2 Figures.

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UDC 616.72-001-008.822.12-073.8

USSR

ROKITYANSKIY, V. I. and YAKIMOV, YU. V., Kazan' Pedagogical Institute and Kazan' Institute of Traumatology and Orthopedics

"Proton Relaxation in Joint Tissues After Trauma: Study Based on Nuclear Magnetic Resonance Data"

Moscow, Ortopediya, Travmatologiya i Protezirovaniye, No 9, 1971, pp 35-41

Abstract: The time of proton relaxation in the joint tissues of rats was investigated by the nuclear magnetic resonance spin echo method during the month following the inflicting of a trauma. The tissues of the intact knee joint of white rats have 1 to 2 gram of water per gram of dry substance. They are characterized by absolute values of spin-lattice relaxation ( $T_1$ ) and spin-spin relaxation ( $T_2$ ) which are much smaller than those for pure water; the  $T_1:T_2$  ratio is about 10. The first 3 days after the trauma were marked by a considerable longer time of proton relaxation ( $T_1$  and  $T_2$ ) and little change in the  $T_1:T_2$  ratio. There was a statistically insignificant increase in water per gram of dry substance and 2 substantial decrease in structural water. Ten days after the trauma there was a moderate decrease

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USSR

ROKITYANSKIY, V. I., and YAKIMOV, YU. V., Ortopediya, Travmatologiya i  
Protezirovaniye, No 9, 1971, pp 35-41

in the time of proton relaxation and an increase in the  $T_1/T_2$  ratio with a  
considerable increase in both total and structural water. A month after the  
trauma all the indexes of proton relaxation and total water approached those  
of intact joints.

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UDC 614.875

R  
USSR

ROKITYANSKIY, V. I., Doctor of Medical Sciences

"Biophysical Mechanisms of Ultraviolet Radiation."

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 4, 1970, pp 84-88

Abstract: The amino acids tryptophan, tyrosine, phenylalanine, and cystine are most vulnerable to ultraviolet rays. These macromolecules are largely responsible for absorbing the rays, which have an injurious effect on cells. The quantum yield of photoinactivation of enzymes is low. Another series of reactions is induced by a second photoionization product, hydrated electrons, a powerful reducing agent, more vigorous than even atomic hydrogen, and quick to react with molecules of organic compounds. There may also be changes in the conformation of the macromolecules. Interaction of the aromatic amino-acid radical with groups of the neighboring peptide chain causes "cross linking" between the chains and stabilizes the impaired configuration. The nitrogeneous bases of the nucleic acids are also vulnerable to ultraviolet radiation, especially in the shortwave region. They undergo photochemical transformation, and in the process lose most of their physiological activity. When nucleic acids are exposed to ultraviolet radiation, the energy of the quantum absorbed by any

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USSR

ROKITYANSKIY, V. I., Kazanskiy Meditsinskiy Zhurnal, No 4, 1970, pp 84-88

of its nitrogenous bases is transmitted to the neighboring bases and then transferred throughout the chain of the macromolecule of a particular nucleic acid until it is converted into thermal energy or expended on a photochemical reaction. The article concludes with a discussion of the use of electron paramagnetic resonance to study the effect of ultraviolet radiation on biological objects.

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EPD: CYBERNETICS

29 Oct 71

UDC 612.76

89. USSR

SO: FOREIGN PRESS DIGEST  
28 OCT 1971

ROKOTOVA, N. A.

"On the Problem of Controlling Movement"

Voprosy Fizilogii Cheloveka i Zhivotnykh (Questions of the Physiology of Man and Animal); Leningrad, "Nauka" Publishing House, Leningrad Branch, 1970, pp 63-72

Abstract: Theoretical considerations and experimental results concerning a study of central mechanisms for controlling human hand movements during the performance of certain motor tasks are presented. It is demonstrated that programming the order of actions during the performance of homogeneous movements using a control panel is conditioned by the geometry of the hand's route. Grounds are given for the notion that nerve control over the rate of movements is related to the work of a special mechanism which assigns the rate, and proofs are offered in favor of the proposition that there is a certain independence in controlling the order and rate of movements.

UDC 621.311.001.1

USSR

MARKOVICH, I. M., ROKOTYAN, S. S.

"Optimization and Estimation Models for Selecting the Optimal Development of Electric Power Systems"

V sb. Optimiz. i upr. bol'shimi sistemami v energ. (Optimization and Control of Large Systems in Power Engineering -- collection of works), Irkutsk, 1970, pp 134-153 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Yel74)

Translation: A digital computer representing a mathematical valuation model of optimization of development of power systems is analyzed. This optimization makes it possible to obtain an economic estimate of the versions of development of the power system given by the designer with respect to the calculated expenditures: a) for construction and maintenance of the power system; b) for fuel; c) for the electric power network; d) for losses from interruptions in the electric power supply and insufficient quality of the power. The first component of the expenditures is calculated in the calculation unit. In the optimization mode unit of the first type, the distribution of the active power of the electric power systems is optimized. The effect of losses in the networks can be considered in it, load charts of

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USSR

MARKOVICH, I. M., ROKOTYAN, S. S., Optimiz. i upr. bol'shimi sistemami v energ. (Optimization and Control of Large Systems in Power Engineering -- collection of works), Irkutsk, 1970, pp 134-153 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Yel74)

individual units are obtained, and there is the possibility of introducing mode restrictions (for example, with respect to power overcurrents, with respect to voltage level). In the mode unit of the second type, the energy distribution of the power system is optimized considering the form of the chart with respect to duration. The advantages of the unit of this type are simplicity of the algorithm and calculation speed. The disadvantages are the impossibility of considering the losses in the network, determination of the load chart of the power system units and selection of the mode restrictions. The network unit also is an optimization unit since in it the expenditures on construction and maintenance of the electric power networks are determined on the basis of selecting the optimal network scheme and optimal parameters of its elements. The reliability is considered indirectly by correcting the network scheme obtained in the network unit without considering the reliability factor. The difficulties of building the network unit are investigated. The essence of the model of the branches

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USSR

MARKOVICH, I. M., ROKOTYAN, S. S., Optimiz. i upr. bol'shimi sistemami v energ. (Optimization and Control of Large Systems in Power Engineering -- collection of works), Irkutsk, 1970, pp 134-153 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Yel74)

and boundaries recommended for finding the optimal cost of the network (a nonlinear problem) is explained. The interaction of the mode and network units is analyzed. A model of consideration of the dynamic nature of the problem in the network unit of the valuation model is investigated. On the basis of the discussed principles, in 1963, the ENIN [Power Engineering Institute] and Energoset'proyekt [All-Union State Planning, Surveying and Scientific Research Institute of Power Systems and Electric Power Networks] developed a valuation model used when working out the plan for development of USSR power engineering in 1990-2000. Another model contains a network unit which insures obtaining of a global minimum of expenditures, the mode unit selecting the optimal composition of the units and considering the restrictions with respect to overcurrents and the loss unit considering the probability characteristics of the discharge. These areas of creation of optimization models are considered: 1) use of the improved valuation model as one of the main elements of the optimization models; 2) creation

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USSR

MARKOVICH, I. M., ROKOTYAN, S. S., Optimiz. i upr. bol'shimi sistemami v energ. (Optimization and Control of Large Systems in Power Engineering -- collection of works), Irkutsk, 1970, pp 134-153 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Yal74)

of the optimization model of the unit type with feedback between the units, and 3) creation of the optimization model of the global type on the basis of integral linear programming. The bibliography has 13 entries.

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Power Systems

UDC 621.315.05:621.3.015

USSR

VENIKOV, V.A., Dr. of Technical Sciences; MARKOVICH, I.M., ~~CHERNYAN, S.S.~~  
CHERNYA, G.A., Engineer [Moscow]

"Choice Of A System Of Rated Voltages For The Power Pools In The United Power  
Grid Of The USSR"

Elektrichestvo, No 7, July 1972, pp 1-4

Abstract: The problem is considered of the choice of voltages in electrical networks from an immediate and distant viewpoint. It is concluded that the best solution for a single power system for the European part of the USSR and a single power system for the USSR is the creation of a power pool with a single system of rated voltages. Technical and economic analysis and operational tests show that for USSR conditions the optimum system of rated voltages is 35-110-220-500-1150 kv. Introduction into the USSR at the end of 50 years, of a voltage of 330 kv did not give the expected technical and economic advantages. In the last 10-12 years, the intense increase of 330-kv nets in the grid system of the south and the failure of this voltage system to assure reliability of exploitation of a power energy interconnection with a length up to 1500 km lead to the introduction in the USSR of 750 kv voltage and the formation in the country of territories with two different systems of rated voltages. Henceforth, use of 330-kv voltage must be limited to the grid system of the south and northwest. A  
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USSR

VENIKOV, V.A., et al, Elektrichestvo, No 7, July 1972, pp 1-4

system of voltages of 220-500 kv, including a large part of the country, assures at present reliability and economical operation of a power system; henceforth, in the USSR the introduction of a subsequent system of a-c voltage of the 1150-kv class is necessary, which must span all the territory of the country. The problem of linking 1150-kv and 750-kv nets is subject to subsequent study, particularly because they also depend on the choice of the subsequent stage of voltages in the power systems of the country--members of the Council For Mutual Economic Aid in Western Europe. A combination of system-generating functions of the 1150-kv a-c lines with long-distance transfer electrotransmission of d-c is subject to study. 1 ill. 2 ref.

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Acc. Nr.

**AP0049951**

Abstracting Service:  
CHEMICAL ABST. 5/70

Ref. Code

**UR 0467**

104893w X-ray diffraction study of the effect of thermal treatment on the fine structure of pyrocarbon. Khomenko, A. A.; Kasatoshkin, V. L.; Rol'bin, Yu. A.; Smirnov, Yu. E. (USSR). *Chem. Tverd. Topl.* 1970, (1), 118-23 (Russ). The pyrocarbon deposited at 2000° was ground (size of grains 40-100  $\mu$ ) and heated in an Ar atm. at 2000-3000° at a rate of 40°/min. The samples heated at 2000-2600° were mixed with 40% Ni powder and those heated at 2700-3000° were mixed with 70% Ni powder for removing the effect of weak absorption of x-rays by pyrocarbon, i.e., considerable diffraction-lines broadening. A graphite mixed with 40 or 70% Ni powder was used as the std. The exptl. relation between the interplanar spacings and the sizes of space of coherent scattering of pyrocarbon, and temp. of treatment was detd. by method of harmonic anal. using 2 orders of reflection of one diffraction line. A Warren-Bodenstein formula was used for detn. the diams. of layers from a 2-dimensional zone (11) becoming a 3-dimensional line (110). The temp. relation of all these characteristics are given. Tadeusk J. Bartczak

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REEL/FRAME  
**19801889**

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UDC: 621.373:530.145.6

USSR

VEL'MUSHKIN, L. A., SKVORTSOV, B. V., ROLDUGIN, V. I.

"A Pulse Gas-Discharge Pumping Tube for Optical Masers"

USSR Author's Certificate No 275259, filed 12 Oct 68, published 26 Oct 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D241 P)

Translation: A pulse gas-discharge laser pumping tube is proposed which contains a discharge flask made in the form of a T-shaped tube, a metal busbar which is electrically connected to one of the two electrode assemblies and located on the surface of the flask in such a way that the longitudinal axis of the cylindrical branch of the flask is perpendicular to the above-mentioned busbar. In order to improve the efficiency of ring emission in the ultraviolet spectral region, eliminate the additional heating of the active medium of the laser by infrared radiation from the discharge channel, and also to increase the maximum energy of a flash, the cylindrical branch of the flask accommodates a cylindrical chamber of smaller diameter coaxial with the branch, closed on the side of the axis which joins the electrodes, and used for holding the active medium of the laser. To facilitate breakdown of the discharge gap and to reduce the

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VEL'MUSHKIN, L. A. et al., USSR Author's Certificate No 275259

a radial shock wave on the end of the cylindrical chamber, the closed end of this chamber has a conical construction which comes out on a level no higher than the axis of symmetry of the electrode assemblies of the tube.

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Vacuum Tubes

UDC: 621.375.8

USSR

VEL'MUSHKIN, D. A., SKVORTSOV, B. V., ROLDUGIN, V. I.

"A Pulse Gas-Discharge Tube for Laser Pumping"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent, No 275259, Class 21, filed 12 Oct 68, p 61

Abstract: This Author's Certificate introduces: 1. A pulse gas-discharge tube for laser pumping which contains a discharge envelope made in the form of a T-shaped tubular enclosure, a metallic bus electrically connected to one of two electrode groups and located on the surface of the envelope in such a way that the longitudinal axis of the cylindrical branch of the enclosure is perpendicular to this bus. As a distinguishing feature of the patent, the tube is designed for improved efficiency of ring emission in the ultraviolet region of the spectrum, elimination of auxiliary heating of the active body of the laser by infrared emission from the discharge channel, and also for increased maximum flash energy. Located in the cylindrical branch of the enclosure is a smaller coaxial cylindrical chamber closed on the side of the axis connecting the electrodes and designed to accommodate the active body of the laser. 2. A modification of this tube distinguished by the fact that breakdown of the discharge gap is facilitated and the effect of the radial shock wave on the end of the cylindrical chamber is reduced by tapering the closed end of the cylinder up to a level no higher than the axis of symmetry of the electrode groups of the tube.

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UDC: 621.327.52

USSR

SYSUN, V. V., BASOV, Yu. G., ~~BOLDUGIN, V. I.~~

"A Gas-Discharge Light Source"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333630, Division H, filed 30 Jul 70, published 21 Mar 72, p 210

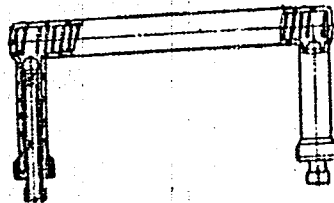
Translation: This Author's Certificate introduces: 1. A gas-discharge light source which contains electrode units built into a discharge tube filled with working gas. The tube is made of an optically transparent material, and the walls contain and stabilize the discharge channel. As a distinguishing feature of the patent, the maximum specific energy of the discharge is increased by increasing the surface containing the plasma. Mounted inside the discharge section of the tube is a helix of optically transparent material whose longitudinal axis coincides with that of the discharge channel. 2. A modification of this light source distinguished by the fact that the turns of the helix have their lateral surface in contact with the walls of the discharge section of the tube. 3. A modification of the source covered in points 1 and 2 distinguished by the fact that at least two-thirds of the wall surface of the discharge section of the tube are shaded by the helix. 4. A modification of the source covered in point

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USSR

SYSUN, V. V. et al., USSR Author's Certificate No 333630

1 distinguished by the fact that the helix is made of a more refractory material than the discharge tube, e. g. of fused quartz.



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1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--ON THE EXPERIENCE OF SIMULTANEOUS REGISTRATION OF ULF EMISSION AND  
AURORAE INTENSITY -U-  
AUTHOR--(02)--RULDUGIN, V.K., TSIRS, G.P.  
COUNTRY OF INFO--USSR R  
SOURCE--RAZDEL IV, POLYARNYYE SIYANIYA, 1970, NR 19, PP 29-31  
DATE PUBLISHED--70  
SUBJECT AREAS--ATMOSPHERIC SCIENCES  
TOPIC TAGS--AUROKA, PULSATION, ELECTRON, HYDROGEN, VERY LOW FREQUENCY,  
RADIO EMISSION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1994/0106 STEP NO--UR/3307/70/000/019/0029/0031  
CIRC ACCESSION NO--AP0114502  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 025

CIRC ACCESSION NO--AP0114502

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE PAPER PRESENTS RESULTS OF THE ANALYSIS OF THE SIMULTANEOUS RECORD OF AURORA INTENSITY AND ULF EMISSION ON FREQUENCIES 425 HZ, 725 HZ AND 11 KHZ. IT HAS BEEN DISCOVERED THAT 1) DURING AURORA THE INTENSITY OF THE ULF EMISSION ON ALL FREQUENCIES IS REDUCED; 2) AT THE MOMENT OF APPEARANCE OF PULSATING AURORA ON THE 425 HZ FREQUENCY THE PULSATIONS WITH THE PERIOD 2-4 TIMES GREATER THAN THE PERIOD OF AURORA PULSATIONS ARE OBSERVED; ON THE 725 HZ FREQUENCY THE BURST OF THE ULF EMISSION WITHOUT QUASI PERIODIC STRUCTURE IS ALSO RECORDED. FURTHER DEVELOPMENT OF PULSATIONS OF AURORA AND ULF EMISSION OCCURS INDEPENDENTLY. THIS CHARACTER OF CONNECTIONS SHOWS THAT THE ORIGIN OF BOTH PHENOMENA IS CAUSED BY ONE AND THE SAME EVENT, I.E. THE STREAM OF ENERGY PARTICLES, BUT THE ENERGIES OF PARTICLES (ELECTRONS) RESPONSIBLE FOR THESE PHENOMENA ARE DIFFERENT. DURING PULSATING AURORA THE HYDROGEN EMISSIONS ARE EITHER NOT OBSERVED AT ALL, OR THEIR INTENSITY IS SMALL.

UNCLASSIFIED

1/2 020  
TITLE--DIURNAL SEASONAL CHANGES OF INTENSITY OF AURORA PULSATIIONS -U-  
AUTHOR--ROLDUGIN, V.K. R  
COUNTRY OF INFO--USSR  
SOURCE--RAZDEL IV, POLYARNYYE SIYANIYA, 1970, NR 19, PP 27-28  
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--AURORA, DIURNAL VARIATION, SEASONAL VARIATION, PULSATION,  
RADIATION INTENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--1994/0107

STEP NO--UR/3307/70/000/019/0027/0028

CIRC ACCESSION NO--AP0114503

UNCLASSIFIED



2/2 020  
CIRC ACCESSION NO—AP0114503  
ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. THE PAPER USES PHOTOMETRIC RECORDS  
OF AURORA FOR TWO YEARS (JANUARY 1965 TO JANUARY 1967). TWO MAXIMUMS  
WERE DETECTED IN THE DIURNAL INTENSITY CHANGES OF PULSATIONS: NIGHT AND  
BEFORE THE MORNING. WITH THE CHANGE OF THE SEASON THE MORNING MAXIMUM  
IS SLIGHTLY SHIFTED IN TIME. THE PECULIARITY OF THE MORNING PULSATIONS  
AS COMPARED WITH THE MIDNIGHT IS THE LESSER FREQUENCY OF BURSTS  
OCCURRENCES.

PROCESSING DATE--09OCT70

UNCLASSIFIED

UNCLASSIFIED

Acc. Nr.: AP0042361

Ref. Code: UR0203  
JPRS 50162

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Zone of Pulsating Auroras

(Abstract: "The Zone of Pulsating Auroras," by V. K. Roldugina and G. V. Starkov, Polar Geophysical Institute, Kola Affiliate Academy of Sciences USSR, Moscow, Geomagnetizm i Aeronomiya, Vol X, No 1, 1970, pp 97-100)

Pulsating auroras are insignificant in intensity; sometimes pulsations are observed against the background of the night sky and constitute periodic brightness changes with  $T \sim 5-10$  sec. The diurnal variation of pulsations differs from the diurnal variation of auroral intensity. At the latitudes of the Fritz zone pulsations are almost never observed prior to midnight; their frequency maximum falls at 0400-0700 local geomagnetic time. During an auroral substorm pulsating auroras are observed in the morning hours on the equatorial side of the zone. The authors made a detailed study of the relative position of the oval zone in the region of pulsating auroras. The investigation was made using the results of photometric observations at Loparskaya ( $\Phi = 64.3^\circ$ ,  $\Lambda = 115^\circ$ ) and at Kem' ( $\Phi = 60.6^\circ$ ,  $\Lambda = 118^\circ$ ) for January - March 1967. These stations are situated on almost the same corrected geomagnetic longitude and are adequately spaced in latitude. Observations were made with identical photometers directed to the zenith. FEU-19 photomultipliers with antimony-

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cesium photocathodes were used as detectors. The photometric observations were compared with the position of the auroral band relative to the observation points at specific times. It was found that the region where pulsations occur is broadened primarily eastward with an increase in magnetic activity. The zone of pulsating auroras is situated primarily in the region of the equatorial boundary of the oval zone.

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7/2

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--PREPARATION AND PROPERTIES OF FIBERS FROM THE LACTAM OF 4  
AMINOCYCLOHEXANECARBOXYLIC ACID -U-  
AUTHOR--(OS)--VOLGKHINA, A.V., MURASHKINA, S.I., KHARITONOVA, A.S.,  
FUZHIKOVA, S.S., ROLEV, M.YA.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. VOLOKNA 1970, (2), 67-8  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--COPOLYMERIZATION, LACTAM, CAPROLACTAM, SULFURIC ACID,  
SYNTHETIC FIBER, ELONGATION, NYLON, AMINE, CYCLOHEXANE, CARBOXYLIC ACID  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/0831 STEP NO--UR/0183/70/000/002/0067/0068  
CIRC ACCESSION NO--AP0124498  
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124498

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE COPOLYMER OF THE TITLE LACTAM (I) (PREP. BY HEATING CIS 4 AMINOCYCLOHEXANECARBOXYLIC ACID AT 300DEGREES IN AN AUTOCLAVE) WITH EPSILON CAPROLACTAM (II) WAS DONE AT 185-240DEGREES DEPENDING ON THE I-II RATION IN THE PRESENCE OF K METAL AND II N ACETYL DERIV. THE POLYMER SELTS CANNOT BE SPUN INTO FIBERS, BUT 10-12PERCENT SOLNS. IN H SUB2 SO SUB4 WERE SPUN INTO WATER, GIVING EXCELLENT FILAMENTS. THE OPTIMUM MONOMER RATIO WAS 1:1, THE TEMP. 185DEGREES. THE FIBERS PREP. UNDER THE OPTIMUM CONDITIONS HAD 589 KG-MM PRIME2 MODULUS AT 3PERCENT ELONGATION AND RESISTED 41,080 FLEX CYCLES UNDER 5 KG-MM PRIME2 LOADING IN BOTH CASES, EXCEEDING THESE PROPERTIES OF NYLON 6.

UNCLASSIFIED

USSR

UDC 531.776.088:621.375.826

GUTMAN, G. B., ROLICH, V. I., TIMOFEYEV, V. M., TRET'YAKOV, V. E., and  
FILATOV, Yu. V.

"On Exactness Characteristics of a Measuring Annular Laser Transducer of  
Angular Speed"

Tr. Metrol. In-tov SSSR [Works of Metrological Institutes USSR], 1972, No  
139(199), pp 3-9 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya  
i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.484)

Translation: The errors of a measuring transducer of angular speed, based  
on an annular gas laser, were experimentally investigated. Measurements  
were made for different time intervals when stabilizing the emission fre-  
quency of the annular laser and without stabilizing. It is demonstrated  
that the stabilization of emission frequency significantly increases the  
measuring accuracy of angular speed. The exactness characteristics of the  
apparatus were determined for different angular speeds when measuring mean  
and current values of angular speed. Six illustrations, four bibliographical  
references.

1/1

USSR

ADAMENKO, A. I., ROLIK, A. I., PAVLOV, L. V., SHKIL'KO, G. YA., YAKOVLEV, A. I.

"Procedure for Manufacturing Stators for AC Electric Motors"

USSR Author's Certificate No 370697 (from Otkrytiya, Izobreteniya, Promyshlennyye obraztsy, Tovarnyye znaki (Discoveries, Inventions, Industrial Models, Trademarks, No 11, 1973, page 171)

Translation: This method of manufacturing stators for AC electric motors by which the winding is placed in the gap of a nonmagnetic electrically conducting mount, the mount is inserted into a hollow in the stator setting it by the grooves opposite the stator grooves, an electric pulse is fed to the winding to create a magnetic field pulling the winding into the stator grooves is distinguished by the fact that in order to decrease the forces required to throw the winding from the mount into the stator and increase the productivity of labor, the grooves of the stator and the mount are made open and arranged in parallel for each pair of poles of the planes, and the conductors of the winding are shaped in advance into a coil group with calibrated grooved parts and with soft frontal parts.

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--INFLUENCE OF 5-BROMODEOXYURIDINE ON THE DIFFERENTIATION OF MUSCLE  
TUMOR CELLS IN A MONOLAYER CULTURE -U-  
AUTHOR-(02)-FRIDLYANSKAYA, I.I., ROLLE, N.N.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 1970, 12(5), 684-6

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUMOR, MUSCLE TISSUE, MYOGENESIS, CULTURE MEDIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/C273

STEP NO--UR/9053/10/012/005/0684/0686

CIRC ACCESSION NO--AP0134078

UNCLASSIFIED



2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134078

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. MUSCLE TUMOR CELLS GROWN ON MEDIA  
CONTG. 5-BROMODEOXYURIDINE (1 MUG-ML) DEVELOPED FEWER POLYKARYOCYTES  
THAN THOSE GROWN ON NORMAL MEDIA. APPARENTLY THE URIDINE ANALOG  
INHIBITED MYOGENESIS BY THE MUSCLE CELLS. FACILITY: LAB. GENET.  
TUMORS CELLS, INST. CYTOL., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 621.375:621.3.064(088.8)

POGOREL'SKIY, A. Ye., ~~ROL'NIK, M. A.~~, SEMENENKO, V. A.

"A Device for Making Inductively Coupled Circuits Spark-Safe"

USSR Author's Certificate No 259981, filed 26 Sep 65, published 4 May 70  
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D123 P)

Translation: This Author's Certificate introduces a device for making inductively coupled circuits such as the output transformers of amplifiers spark-safe when there is intermittent interruption of the DC circuit in the primary winding. To increase the maximum spark-safe power, a choke in series with a DC source is connected in the primary circuit of the transformer with a capacitor which shunts the DC source and the choke. Resumé.

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USSR

UDC 622:621.395/.395(022).004

BIZIN, P. S., VERESCHAGIN, G. P., ROL'NIK, M. A.

"Mine Communication and Signaling"

Shakhtnaya svyaz' i signalizatsiya (cf. English above), Moscow, "Nedra," 1970, 166 pp, ill. 1 r, 23 kop (from RZh--Elektrosvyaz', No 6, June 1970, Abstract No 6.64.50K)

Translation: The distinctive features are considered of the explosiveproof use of apparatus for mine communication. The organizational principles and new systems of dispatcher and general mine communication are given, and also the means of communication and signaling which assure operative direction of production processes with respect to the mining and transportation of coal. Communication systems at the period of construction of shafts [shakhta] are described and also the communication means during mine rescue operations. Methods of adjustment and operational maintenance for new communication are presented. Standard design solutions are presented for the arrangement in mines of the apparatus under consideration. The book is intended for specialists occupied with the planning, installation, and operation of apparatus for mining communication and signaling; it may also be useful to students of mining institutes and tekhnikums. 109 ill. 14 tab. 40 ref. Summary.

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- 91 -

USSR

UDC [537.226+537.311.33]:[537+535]

YURKEVICH, V. E., and ROLOV, B. N.

"Permittivity of Ferroelectric Solid Solutions"

Uch. zap. Latv. un-t (Scientific Notes of Latvia University), 1971, 147,  
pp 35-49 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1253 by authors)

Translation: Within the framework of the thermodynamic theory of ferroelectric solid solutions the authors consider the behavior of permittivity, with allowance for variation with concentration and temperature. The theoretical results obtained are compared with available experimental data for series of ferroelectric solid solutions. The concentration dependence of the Curie-Weiss constant is obtained. A theoretical valuation is made of the halfwidth of the permittivity curve for solid solutions, which correctly reflects experimental regularities.

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Electricity and Magnetism

USSR

UDC 537:226+537:311:33]:[537+535

ROLOV B. N.

"The Role of Fluctuations in the Thermodynamic Theory of Ferroelectric Phase Transitions in Solid Solutions"

Tr. Vses. nauchno-tekhn. konferentsii po termodinamike, Leningr. tekhnol. in-t kholodil'n. prom-sti, [Works of All Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry], Leningrad, 1970, pp 92-100, (Translated from Referativnyy Zhurnal Fizika, No 10, 1970, Abstract No 10 Ye 745 by V. Oskotskiy).

Translation: A theory of eroded phase transitions in ferroelectrics (F) is constructed on the basis of analysis of fluctuations in the polarizations of Kentzig areas (KA), areas with homogeneous polarization, into which the F is divided near the transition temperature. The dependence of the distribution function of polarization of Kentzig areas on temperature  $\frac{n}{N}(T)$  where N is the total number of KA, n is the number of depolarized KA is found on the basis of the theory of Frenkel heterophase fluctuations.

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USSR

UDC 537:226+537:311:33]:[537+535

ROLOV, B. N., Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodil'n. prom-sti, [Works of All Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry], Leningrad, 1970, pp 92-100.

With eroded phase transitions, function  $\frac{n}{N}(T)$  changes from 1 to 0 not suddenly, but smoothly. In this case,  $T_k$  is determined from the condition  $\frac{n}{N}(T_k) = 1/2$ . The relationship between the function  $\frac{n}{N}(T)$  and the anomalous behavior of heat capacity and thermal expansion near the eroded phase boundary is determined. Effect of an external electric field on displacement of the transition temperature is shown. In all cases the linear dimensions of the KA for  $\text{BaTiO}_3$  are on the order of  $0.6 \cdot 10^{-6}$  cm, which agrees with experimental data involving their direct determination. The application of the KA model for two-component solid solutions is analyzed.

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1/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--ALTERNATION OF POLARITY AND DIELECTRIC HYSTERESIS IN THE VICINITY  
OF EXPANDED FERROELECTRIC PHASE TRANSITION POINT -U-

AUTHOR--(02)-ROLOV, B.N., ROMANOVSKIY, T.B.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS FIZ. TEHN. SER. (USSR), NO. 2, P.  
14-19, 1970

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HYSTERESIS LOOP, FERROELECTRIC PROPERTY, DIELECTRIC PROPERTY,  
MATHEMATIC MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3007/1726

STEP NO--UR/0371/70/000/002/0014/0019

CIRC ACCESSION NO--AP0136967

UNCLASSIFIED

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012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136967

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ATTEMPT IS MADE TO FIND AN ANALYTIC SHAPE FOR THE HYSTERESIS LOOP WITHIN THE LIMITS OF KANZIG'S MODEL. THE OBTAINED EXPRESSIONS ENABLE CALCULATING THE MEAN VOLUME OF KANZIG'S REGIONS AND THE COERCIVE FIELD VALUE. THE RESULTS ARE COMPARED WITH EXPERIMENTAL DATA.

UNCLASSIFIED



UNCLASSIFIED

PROCESSING DATE--20NOV70

172 015

TITLE--MODIFIED STEROIDS. V. PMR SPECTRA OF SOLASODANE DERIVATIVES -U-

AUTHOR--(05)--YERYEV, V.P., TOLSTIKOV, G.A., VASILYUK, S.M., ROMACHENKO, G.N., GORYAYEV, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 33-9

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--HORMONE, PROTON RESONANCE, PROTON SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/0760

STEP NO--UK/0360/70/020/002/0033/0039

CIRC ACCESSION NO--AP0131355

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--20NOV70

GIRC ACCESSION NO--AP0131355

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIGNALS OF ME GROUPS 5 ALPHA AND 5 BETA SCLASODANES WERE LOCATED IN THEIR PMR SPECTRA. THE RULE OF ADDITIVITY OF CHEM. SHIFTS OF ANGULAR ME GROUPS HOLDS IN THIS CLASS OF COMPODS. AS IN THE CASE OF ANDROSTANES. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--CHLOROMETHYLATION OF METHYL CARBONATES OF 4,ALKYLPHENOLS -U-  
AUTHOR-(03)-CHERNYAVSKAYA, T.A., ROMADANCE, I., CHIZHIKOVA, V.P.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(3), 475-7 R  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALKYLATION, CHLORINATION, CARBONATE, PHENOL; CONDENSATION  
REACTION, BROMINATED ORGANIC COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/1673 STEP NO--UR/0366/70/005/003/0475/0477  
CIRC ACCESSION NO--AP0112667  
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0112667

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF 2,4,6,R,R  
PRIME1,R PRIME2,C SUB6 H SUB2 ONA WITH CLCO SUB2 ME IN ACETONE GAVE  
75-95PERCENT 2,4,6,R,R PRIME1,R PRIME2,C SUB6 H SUB2 OCO SUB2 ME (I) (R,  
R PRIME1, AND R PRIME2 GIVEN): H, ISO-PR, H; H, ET-MECH, H; H, TERT-BU,  
H; H, ETCME SUB2, H; BR, ETMECH, H; BR, ETCME SUB2, H; CL, TERT-BU, H;  
CL, ETCME SUB2, H; BR, TERT-BU, BR; BR, ETCME SUB2, BR. THE  
CHLOROMETHYLATION RATE OF I (M. SOMMELET, 1933) DEPENDS ON THE SIZE AND  
BRANCHING OF I. THE FOLLOWING CHLOROMETHYL DERIVS. OF I WERE PREPD. (R  
EQUALS R EQUALS R PRIME2 EQUALS H, R PRIME1 GIVEN): ME, ISO-PR, ETMECH,  
TERT-BU, ETCME SUB2. FACILITY: RIZH. POLITEKH. INST., RIGA,  
USSR.

UNCLASSIFIED

USSR

UDC 536.46

ROMADONOVA, L. D., MAL'TSEV, V. M., and POKHIL, P. F.

"Influence of the Physicochemical Properties of the Fuel and the Oxidant Upon the Nature of the Relationship of the Combustion Rate of a Fuel Mixture to the Particle Size of the Fuel"

Novosibirsk, Fizika Goreniya i Vzryva, No 1, 1972, pp 8-15

Abstract: In order to trace the influence of the physicochemical properties of the fuel and the oxidant upon the nature of the relationship of the combustion rate of a fuel mixture to the particle size of the fuel, stoichiometric compositions were investigated on the basis of three oxidants and 28 fuels. It is shown that in the case of a fusible oxidant and a nonsublimable fuel, the combustion rate of a composition with a fuel of large particle size is higher than the combustion rate of a composition with fine fuel particles. 2 figures. 3 tables. 8 references.

1/1

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1/2 C18 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--THE PRIMARY ENERGY SPECTRUM OF COSMIC RAYS IN THE 10 TO THE 13TH  
POWER TO THE 10 TO THE 15TH POWER EV REGION -U-  
AUTHOR--(C4)--BLAVAC, T., NESTEROVA, N.M., NIKOLSKIY, S.I., ROMAKHIN, V.A.  
COUNTRY OF INFO--USSR, HUNGARY  
SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 11TH, BUDAPEST, HUNGARY,  
AUGUST 15-SEPTEMBER 4, 1969, PROCEEDINGS, VOLUME 1 ORIGIN AND GALACTIC  
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--EXTENSIVE AIR SHOWER, ENERGY SPECTRUM, COSMIC RAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD7G/605060/F08 STEP NO--HU/2506/70/029/000/0521/0525

CIRC ACCESSION NO--AT0144421

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144421

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. INVESTIGATION OF THE EXTENSIVE AIR SHOWER (EAS) SIZE SPECTRUM IN THE SIZE INTERVAL OF 2,000 TO 2,000,000 EV, MEASURED AT THE TIEN SHAN STATION (ALTITUDE 3340 M A.S.L.). IT WAS FOUND THAT THE MEASURED SIZE SPECTRUM CANNOT BE REPRESENTED BY A POWER LAW WITH A CONSTANT EXPONENT. THE DATA OBTAINED ARE COMPARED WITH VARIOUS THEORETICAL CALCULATIONS, AND AN INTERPRETATION OF THE RESULTS IS PRESENTED. FACILITY: AKADEMIIA NAUK SSSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR

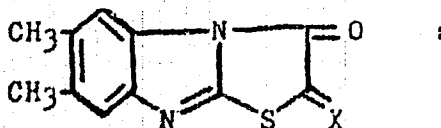
UDC 547.789.6'735.5.07

KRASOVSKIY, A. N., KOCHERGIN, P. M., and ROMAN, A. R., Zaporozhe Medical Institute, All Union Scientific Chemical-Pharmaceutical Research Institute Imeni S. Ordzhonikidze, Moscow

"Studies in the Imidazole Series. LVII. Synthesis of 6,7-Dimethylbenzimidazo [2,1-b]thiazolidone-3 and Its Derivatives at the Methylene Group"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 822-825

Abstract: Synthesis of 6,7-dimethylbenzimidazo [2,1-b] thiazolidone-3 (I) was developed. Refluxing 5,6-dimethylbenzimidazolyl-2-mercaptoacetic acid in acetic anhydride leads to the formation of (I); when  $\alpha$ -[5,6-dimethylbenzimidazolyl-2]mercaptopropionic acid is used -- the product is 2,6,7-trimethylbenzimidazo[2,1-b]thiazolidone-3, which in spite of the presence of a methylene group does not react with aryldiazonium borofluoride. (I) reacts with aldehydes, isatine, nitro compounds, and with aryldiazonium salts producing derivatives of the methylene group



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USSR

KRASOVSKIY, A. N., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 6,  
Jun 71, pp 822-825

X, m.p. reported:  $C_6H_5CH$ , 254-255°;  $p-CH_3OC_6H_4CH$ , 238-239°;  $p-(CH_3)_2CHC_6H_4CH$ , 225-226°;  $o-O_2NC_6H_4CH$ , 246-247°;  $m-O_2NC_6H_4CH$ , 259-260°;  $p-O_2NC_6H_4CH$ , 318-319°; 2-furfurylidene, 260-261°; 5-nitro-2-furfurylidene, 274-276°; 3-isatinilidene, 344-345°;  $p-(CH_3)_2NC_6H_4N$ , 300-302°;  $p-CH_3OC_6H_4NH_2$ , 228-229;  $p-BrC_6H_4NH_2$ , 262-263°.

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1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT79  
TITLE--SOURCES OF ODORS IN RUSSIAN LEATHER PRODUCTION. 2. USE OF PETROLEUM  
REFINING BY PRODUCTS FOR LINING CATTLE HIDES -U-  
AUTHOR--(05)--DANISH, L.V., KOTOV, M.P., DUSHIN, B.M., ROMAN, A.S.,  
TSIMBALENKO, A.A.  
COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEGK. PROM. 1970, (1), 83-5

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PETROLEUM PRODUCT, LEATHER, TECHNICAL STANDARD, SULFUR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/0947

STEP NO--UR/0323/70/000/001/0083/0085

CIRC ACCESSION NO--AP0124607

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP012+607

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY REPLACEMENT DURING LIMING OF CATTLE HIDES OF NA SUB2 S WITH A S CONTG. WASTE PRODUCT OF PETROLEUM REFINING, AND BY REDN. OF THE TIME OF ROTATION OF THE HIDES IN THE DRUM DURING SOAKING AND LIMING, THE AMT. OF ODORIFEROUS LEATHER WAS REDUCED FROM 28.5 TO 5.8PERCENT. THE TOTAL TIME OF LIMING WAS REDUCED FROM 44 TO 31 HR. THE RESULTANT LEATHER, AFTER TANNING, MET THE REQUIREMENTS OF THE ALL UNION STATE STD. FACILITY: KIEV. TAKHVOL. INST. LEGK. PROM., KIEV, USSR.

UNCLASSIFIED

USSR

GUREVICH, L. E.; ROMAN, G. A. (Joffe Physics-Engineering Institute, USSR Academy of Sciences, Leningrad)

"Theory for Absorption of Sound in Ferromagnetic Dielectrics in Low Temperatures"  
Leningrad, Fizika Tverdogo Tela; September, 1970; pp 2516-8

ABSTRACT: The absorption of sound in ferromagnetic dielectrics, related to the excitation of second sound of phonons and magnons, is studied. The mutual drag of quasi particles and their energy exchange are taken into consideration. It is shown that the absorption coefficient is proportional to the square of the frequency for frequencies  $\omega$  less than some frequency  $\omega_1$  and larger than some other frequency  $\omega_2$ ; but in the interval between  $\omega_1$  and  $\omega_2$  it does not depend on the frequency, and in this interval the absorption coefficient  $\alpha$  is a nonmonotonic function of the temperature. It is shown, further, that the ratio  $\alpha/\omega^2$  decreases monotonically with an increase in the frequency for some temperatures and attains a maximum; then it decreases for others. Finally, substances for which  $T_0 \gg T_c$  are considered. It is shown that when paramagnetic impurities are present, the absorption coefficient depends nonmonotonically on the concentration of the impurities; it has a maximum for some concentration proportional to the frequency, and this maximum value is also proportional to the frequency.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--CHANGE IN THE NATURE OF THE PHOTOINDUCED LUMINESCENCE OF PLANTS  
UNDER THE INFLUENCE OF HERBICIDES. 2. EFFECT OF ARYLDIALKYLUREA  
AUTHOR--(05)--MOCHALKINA, K.I., ROMAN, L.L., GOLOVAN, A.M., MOCHALKIN, A.I.,  
ALEKSEYEV, S.I.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. SEL. KHOZ. 1970, 8(4), 298-300  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ARYL RADICAL, ALKYL RADICAL, UREA, HERBICIDE, PLANT  
PHYSIOLOGY, PHOTOCHEMISTRY, FLUORESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0025

STEP NO--UR/0394/70/008/004/0298/0300

CIRC ACCESSION NO--AP0137224

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 023

CIRC ACCESSION NO--AP0137224

ABSTRACT/EXTRACT--(U) GP-U- ABSTRACT. DIURON, MONURON, AND PHENURON (IN 70PERCENT ETOH) AT CONCN. OF 0.1, 0.01, AND 0.001PERCENT WERE APPLIED TO THE LEAVES OF KIDNEY BEAN PLANTS AT THE FIRST BREAKING OF THE BUD, AND TO THE ROOTS OF GERMINATED SEEDS, GROWN ON PERFORATED PLATES. A MARKED DISTURBANCE OF PHOTOREMISSION OF THE LEAVES OF THE PLANTS WAS NOTED LESS THAN 1 DAY AFTER TREATMENT. THE GREATEST ACTIVITY WAS SHOWN BY DIURON. SOY PLANTS GROWN IN A GREEN HOUSE WERE SPRAYED WITH AQ. ACETONE SOLNS. OF LINURON AND MONURON AT DOSES 0.3 AND 1.0 KG-HA, RESP., PLOTS OF SOY WERE TREATED WITH THE SAME HERBICIDES 3 DAYS AFTER SOWING. PHOTOREMISSION OF THE LEAVES OF THE PLANTS WAS CHANGED, MONURON BEING THE MORE ACTIVE. INDEPENDENT OF HERBICIDES APPLICATION TO EITHER THE LEAVES OR THE ROOT SYSTEM, THERE WAS A CHANGE IN THE NATURE AND INTENSITY OF PHOTOREMISSION OF THE LEAVES. THE TIME OF MIGRATION OF THE HERBICIDE FROM THE ROOT SYSTEM TO THE ABOVE GROUND FOLIAGE COULD BE DETD. BY THE CHANGE OF PHOTOREMISSION OF THE LEAVES, AND THE TIME OF MIGRATION OF THE HERBICIDES IN THE SOIL. FACILITY: INST. BIOKHM. FIZIOL. MIKROORG., MOSCOW, USSR.

UNCLASSIFIED

1/2 022  
UNCLASSIFIED  
PROCESSING DATE--11DEC70  
TITLE--CHANGE IN THE TYPE OF PHOTOINDUCED PLANT LUMINESCENCES AS A RESULT  
OF HERBICIDAL ACTION. SECOND COMMUNICATION. CHARACTERISTICS OF THE  
AUTHOR--(OS)--MOCHALKINA, N.I., ROMAN, L.L., GOLOVAN, A.M., MOCHALKIN, A.I.,  
ALEKSEYEV, S.I.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, KHIMIYA V SEL'SKOM KHOZYAYSTVE, VOL 8, NR 4 (78), APR 70,  
PP 53-60  
DATE PUBLISHED--APR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, ALKYL RADICAL, BENZENE DERIVATIVE, UREA DERIVATIVE,  
PHOTOCHEMISTRY, PLANT PHYSIOLOGY, LUMINESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO--FD70/605014/C09 STEP NO--UR/C394/70/008/004/0058/0060

CIRC ACCESSION NO--AP0140479

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0140479

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CHLOROPHYL MOLECULES EXCITED BY LIGHT QUANTA CAN TRANSFORM THE CAPTURED ENERGY EITHER CHEMICALLY, OR BY MEANS OF PHOTOREMISSION. PRESENTLY HERBICIDES OF THE PHENYLDIALKYLUREA GROUP ARE USED WICELY TO CONTROL WEEDS AND THEY SPECIFICALLY EFFECT FLUORESCENCE AND PHOTOPHOSPHORESCENCE. STUDYING THE MECHANISM OF THEIR ACTION, THE AUTHORS UTILIZED A PHOSPHORESCENCEGRAPH, DESCRIBED EARLIER. IT WAS DETERMINED THAT UREA DERIVATIVES AFFECT BOTH THE CHARACTERISTICS AND INTENSITY OF PHOTOREMISSION OF TREATED PLANT LEAVES, REGARDLESS WHETHER THE AGENT WAS SPRAYED OVER THE LEAVES OR INTRODUCED INTO THE ROOM SYSTEM. THIS CHANGE IN THE INTENSITY OF THE PHOTOREMISSION INDICATED THE TIME WHEN A TOXIC AGENT ENTERED THE PLANT PORTION ABOVE THE GROUND AND BY THE SAME TOKEN GAVE DATA ON THE MIGRATION OF THE AGENTS IN SOIL.

FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF PHYTOPATHOLOGY, MOSCOW, MINISTRY OF AGRICULTURE USSR.  
FACILITY: INSTITUTE OF BIOCHEMISTRY AND PHYSIOLOGY OF MICROORGANISMS, PUSHCHINO, ACADEMY OF SCIENCES USSR.

UNCLASSIFIED



USSR

UDC: 632.954 + 661.717.5

*R*  
MOCHALKINA, K. I., ROMAN, L. I., GOLOVAN', A. M., MOCHALKIN, A. I.,  
ALEKSEYEV, S. I., All Union Scientific Research Institute of Phytopath-  
ology, Moscow, Ministry of Agriculture USSR; and SOKOLOV, M. S., Institute  
of Biochemistry and Physiology of Microorganisms, Pushchino, Academy of  
Sciences USSR

"Change in the Type of Photoinduced Plant Luminescences as a Result of  
Herbicidal Action. Second Communication. Characteristics of the Action  
of Aryldialkylurea Type of Herbicides on Photoremission"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 4 (78), Apr 70, pp 58-60

Abstract: Chlorophyll molecules excited by light quanta can transform the  
captured energy either chemically, or by means of photoremission. Present-  
ly herbicides of the phenyldialkylurea group are used widely to control  
weeds and they specifically effect fluorescence and photophosphorescence.  
Studying the mechanism of their action, the authors utilized a phosphores-  
cencegraph, described earlier. It was determined that urea derivatives  
affect both the characteristics and intensity of photoremission of treated

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USSR

MOCHALKINA, K. I., et al, Khimiya v Sel'skom Khozyaystve, Vol 8, No 4 (78),  
Apr 70, pp 58-60

plant leaves, regardless whether the agent was sprayed over the leaves or introduced into the root system. This change in the intensity of the photoreemission indicated the time when a toxic agent entered the plant portion above the ground and by the same token gave data on the migration of the agents in soil.

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USSR

UDC: 547.754'128.07

SHOSTAKOVSKIY, M. F., KOMAROV, N. V., ~~ROMAN, V. K.~~

"A Method of Producing  $\beta$ -Silicon Substituted Indoles"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,  
No 7, 4 Feb 70, pp 28-29, patent No 262905, filed 4 Apr 67

Translation: This Author's Certificate introduces a method of producing  
 $\beta$ -silicon substituted indoles by interacting organosilicon ketones with  
phenylhydrazine hydro-chloride in the presence of cuprous chloride as a  
catalyst at a temperature of 160-200°C.

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Acc. Nr:

AP0045142

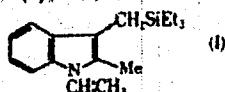
Abstracting Service:  
CHEMICAL ABST.

4/78

Ref. Code:

UR0409

90563z Synthesis of silicon-containing N-vinylindoles. Komarov, N. V.; Roman, V. K. (Irkutsk. Inst. Org. Khim., Irkutsk, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 130 (Russ). Heating 9.5 g 2-methyl-3-(triethylsilylmethyl)indole, 0.25 g K and 90 ml dioxane in an autoclave under  $C_2H_2$  at 13 atm initially to 190° gave in 1-2 hr 52% 2-methyl-3-(triethylsilylmethyl)-N-vinylindole (I), b<sub>p</sub> 140-50°, d<sub>4</sub><sup>20</sup> 0.9985, n<sub>D</sub><sup>20</sup> 1.5750.



Similarly was prepd. 2-methyl-3-[3-(methyldiethylsilyl)propyl]-N-vinylindole, b<sub>p</sub> 164-5°, d<sub>4</sub><sup>20</sup> 0.9738, n<sub>D</sub><sup>20</sup> 1.5576. Ir spectra are reported. The products are polymd. by SnCl<sub>4</sub> or BF<sub>3</sub> to greenish solids. G. M. Kosolapoff

ms

REEL/FRAME  
19780042

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USSR

UDC 532.528

ROMAN, V. M.

"Calculation of Supercavitation Flow Around Thin Shapes in a Limited Stream"

Moscow, Gidromekhanika, No 17, 1971, p 22-31.

Abstract: Based on a linearized statement of the boundary problem for the acceleration potential, a system of singular integral equations is produced relative to the pressure jump and derivative of the thickness of cavitation, for cavitating shapes moving beneath the free surface of a weightless fluid of finite depth, and for cavitating shapes in a flat tube.

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Acc. Nr:

**A70045330**

Abstracting Service: **570**  
INTERNAT. AEROSPACE ABST.

Ref. Code:

**UR0441**

A70-23393 # Flow of a thin wing by the finite stream under fully developed cavitation regime (Obtikannia tonkogo krila obmezenim potokom na rezhimi rozgornutoi kavitatsii). V. M. Roman (Akademiia Nauk Ukraïns'koi RSR, Institut Gidromekhaniki, Kiev, Ukrainian SSR). Akademiia Nauk Ukraïns'koi RSR, Dopovid, Seriya A-Fiziko-Tekhnichni i Matematichni Nauki, vol. 32, Jan. 1970, p. 75-79. In Ukrainian.

From the acceleration potential the boundary value problem on the cavitating wing in the finite flow is reduced to the system of two-dimensional singular integral equations. The numerical method for solving is given based on the method of discrete singularities. The results of the inverse problem solution are presented for the case of infinite fluid. (Author)

Als

REEL/FRAME  
**19780254**

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--ELECTRICAL CONDUCTIVITY OF ZINC SULFIDE SINGLE CRYSTALS -U-

AUTHOR--(04)--KORSUN, V.P., MALTSEV, YE.K., ROMANCHENKO, V.A., PEREKRESTOVA,  
L.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 131-3

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRIC CONDUCTIVITY, ZINC SULFIDE, SINGLE CRYSTAL, FORBIDDEN  
BAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/1398

STEP NO--UR/0139/70/013/002/0131/0133

CIRC ACCESSION NO--AT0120191

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO---AT0120191

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACCUMULATION OF SPACE CHARGE IN A CONST. ELEC. FIELD AND THE CURRENT VOLTAGE CHARACTERISTICS IN A LARGE RANGE OF FIELDS WERE DETD. THE ELEC. COND. WAS DETD. BETWEEN 20 AND 250DEGREES; THE ACTIVATION ENERGY OF THE PROCESS WAS BETWEEN 1.25 AND 1.41 EV. THE STRUCTURE OF THE FORBIDDEN BAND IS DISCUSSED.  
FACILITY: DNEPROPETROVSK. COSUNIV., DNEPROPETROVSK, USSR.

UNCLASSIFIED



1/2 009 UNCLASSIFIED  
TITLE--TERATOMA OF THE SACROCOCCYGEAL REGION -U-

PROCESSING DATE--04DEC70

AUTHOR--ROMANCHUK, I.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 5, PP 84-88

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUMOR, TRAUMATOLOGY, CARCINOMA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3009/0069

STEP NO--UR/0531/70/000/005/0084/0088

CIRC ACCESSION NO--AP0138935

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138935

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DEALS WITH TWO PATIENTS TREATED AT THE CENTRAL INSTITUTE OF TRAUMATOLOGY AND ORTHOPEDICS FOR TERATOMA OF THE SACROCOCCYGEAL REGION. IN ONE 17 YEAR OLD PATIENT TERATOMA WAS OF A BENIGN CHARACTER AND DEVELOPED FOR A PERIOD OF 17 YEARS. DURING THE OPERATION THE TUMOR PROVED TO BE MUCH LARGER THAN DURING CLINICAL EXAMINATION. AFTER ITS REMOVAL RECOVERY ENSUED. IN THE SECOND PATIENT TERATOMA RAN A MALIGNANT COURSE 20 YEARS AFTER ITS CLINICAL MANIFESTATION. AFTER REMOVAL OF THE TUMOR WITH PARTIAL RESECTION OF THE SACRUM THERE WAS FOUND A TERATOMA WHICH IN THE UPPER REGION HAS TRANSFORMED INTO ADENOCARCINOMA. FACILITY: KLINIKA GOSPITAL'NOY KHIRURGII LUGANSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ION EXCHANGE METHOD FOR DETERMINING SOLASODINE IN SOLANUM  
LACINIATUM -U-  
AUTHOR--(02)-ANDREYEVA, L.G., ROMANCHUK, M.A.  
COUNTRY OF INFO--USSR R  
SOURCE--KHIM. FARM. ZH. 1970, 4(1), 43-5  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, SULFURIC ACID, HYDROLYSIS,  
CHROMATOGRAPHY, CHEMICAL PURIFICATION

CONTROL MARKING--NO RESTRICTIONS,

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1998/0359

STEP NO--UR/0450/70/004/001/0043/0045

CIRC ACCESSION NO--AP0121047

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121047

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AMT. OF SOLASODINE (I) IN A CRUDE H SUB2 SO SUB4 HYDROLYZATE WAS DETD. BY USING THE CATIONIC RESIN SDV-3T, A SULFOSTYRENE DIVINYLBENZENE COPOLYMER, TO ISOLATE I. THUS, INTO A CHROMATOG. COLUMN (DIAM. 1.2 CM, HEIGHT 30 CM) HAVING AN UPPER RESERVOIR OF 25 ML CAPACITY WAS PLACED THE SWOLLEN RESIN THE H PRIME POSITIVE FORM AND THROUGH THE COLUMN WAS PASSED 20 ML OF THE H SUB2 SO SUB4 EXT. OF THE TITLE PLANT AT A RATE OF 1 ML-MIN-CM PRIME2. NEXT THROUGH THE COLUMN WAS PASSED 100 ML OF A 1PERCENT NH SUB4 OH SOLN. AT THE SAME RATE. THE RESIDUAL NH SUB4 OH WAS REMOVED FROM THE COLUMN BY VACUUM. AFTER CLOSING THE STOPCOCK, THERE WAS ADDED A MIXT. OF 80PERCENT ISO-PROH-25PERCENT NH SUB4 OH, THE RESIN WAS SHAKEN WITH THIS MIXT., AND 100 ML OF THIS SOLVENT MIXT. PASSED THROUGH THE COLUMN AT THE RATE OF 1 ML-MIN-CM SUB2. THE ELUATE WAS CONCO. UNDER VACUUM ON A WATER BATH. THE RESIDUE WAS DISSOLVED IN AL ALC.-H SUB2 O MIXT. (100:20) AND TITRATED WITH 0.1 N HCL USING A PH METER AND GLASS ELECTRODES, WITH 1 ML OF HCL SOLN. EQUIV. TO 0.04137 G OF I. THE RESULTS WERE RELIABLE WITHIN THE LIMITS PLUS OR MINUS 6PERCENT. FACILITY: VSES. NAUCH. ISSLEO. KHIM. FARM. INST. IM. ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

USSR

TIMOFEEV, M. M., ZUBCHENKO, A. S., KOLYADA, A. A., PAKHURIDZE, V. N., and  
ROMANENCHUK,

"Cold Crack Formation in Ferrite Steel Welding"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 70, pp 9-12

Abstract: Several types of steel are mentioned as being suitable for structures requiring high anti-corrosion and anti-thermal properties. These include the OKh23S2Yu and Kh25Yu5 types, the first of which is known in foreign countries under the name of Sikhromal-12. The defect of these steels is that they are poorly resistant to cold cracks under welding. The purpose of this paper is to investigate the causes of this defect and to study the mechanism of formation of the cracks. Specimens used for the research were these two types of steel, both of which were smelted in open induction furnaces under slag. The OKh23S2Yu was hammered after casting into sheets measuring 12 x 120 x 300 mm while the Kh25Yu5 specimens were studied in cast form. A table of the chemical compositions of both is given. The authors find a dependence between the temperature interval of the crack formation in welds of the two steels and the temperature transition of the steels to the brittle state. They propose

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- 87 -

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TIMOFEEV, M. M., et al, Avtomaticheskaya Svarka, No 10, Oct 70, pp 9-12

a method of welding ferrite steel involving the use of preliminary and accompanying heating to a temperature exceeding the temperature of the transition to the brittle state near the welded seam. Tempering directly after the welding makes it possible to remove the remaining stresses which cause the formation of the cracks. They assert also that the critical temperature of the transition to the brittle state can serve as a criterion of the weldability of ferrite steels.

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USSR

UDC: 518.5:681.3.06

ROMANENKO, A., RUMYANTSEV, V., SHAKHNAZARYAN, Ye.

"Some Problems of Modeling and Optimizing the Activity of the United Scientific and Technical Publishers"

V sb. Vopr. modelir. i optimiz. sistem inform. obsluzh. (Problems of Modeling and Optimizing Information Servicing Systems--collection of works), vyp. 2, Moscow, 1970, pp 148-170 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V778)

Translation: A procedure for organizing the activity of an information agency is proposed which is based on utilizing the methods and means of formation, transmission, accumulation, ordering, and processing of flows of statistical and accounting information on the functioning of the United Scientific and Technical Publishers. This method proposes a study of the stream of information traffic in the United Scientific and Technical Publishers, and also construction of an informational and mathematical model of the organization. As a criterion of optimization, the authors use the cost of losses due the lack of accord of the infor-

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ROMANENKO, A., Vopr. modelir. i optimiz. sistem inform. obsluzh., vyp. 2, Moscow, 1970, pp 148-170

mation to the requirements of users of the United Scientific and Technical Publishers. The optimization problem is solved within the framework of filtration theory. An approximate search algorithm is proposed for optimizing the selected criterion. Illustrative examples are given. V. Mikheyev.



USSR

UDC: 621.643:666.293.012

ROMANENKO, A. A. and YANCHENKO, N. G.

"Defectoscope ID-1M for Controlling the Smoothness of Glass-Enamel Coatings on the Inner Surface of Tubes"

Sverdlovsk, Defektoskopiya, No. 4, 1970, pp 112-117

Abstract: With the rapid growth of the chemical industry, there is increased need for piping with protected inner surfaces. Hence the need for the ID-1M, developed by the VNITI (All-Union Scientific Research Institute for Pipes) for quality control of inner pipe lining. The instrument's operation is based on the electric search method for punctures in the lining. For control, the instrument uses movable search heads which can be inserted into the tube at the end of a metallic rod. The instrument is equipped with optical and sonic signalling which act the moment a defect is discovered. A schematic of the instrument, a detailed description, and a list of its specifications are given. The authors are associated with the VNITI in Dnepropetrovsk.

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USSR

UDC: 519.2:62-50

SERGEYEV, G. A., ROMANENKO, A. F.

"Structural Analysis of Nonstationary Random Processes"

V sb. Nelineyn. i optimal'n. sistemy (Nonlinear and Optimum Systems--collection of works), Moscow, "Nauka", 1971, pp 420-429 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V306)

Translation: The authors consider a method of structural analysis which stems from assumption of the possibility for using a nonstationary random process with generalized stationary  $m$ -th order increments as a mathematical model for an extensive class of nonlinear dynamic systems. Algorithms for structural analysis of these kinds of classes of random processes are considered, and their effectiveness is evaluated. A relationship is established between structural and correlation functions, and the results of structural analysis of different forms of random processes are considered. It is pointed out that the effectiveness of the structural analysis can be improved by using self-adaptive operators with finite memory. Authors' abstract.

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USSR

ROMANENKO, A. G.

"Utilization of Slags From Ferrous Metallurgy"

Moscow, Stroitel'nyye Materialy, No 12, Dec 70, p 29

Abstract: A review is presented of a book to be published soon under the title: "Utilization of Slags From Ferrous Metallurgy," by V. I. Dvlgopol, Candidate of Technical Sciences and State Prize laureate. The book discusses the volume of slags in the USSR, the development of slag transformations, the properties and composition of slags from titanium blast furnaces, high aluminum slags, steel smelting slags, and ferroalloy slags. A chapter deals with the use of metallurgical slags in agriculture. Some discrepancies in production data are noted.

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CSO: 1842-W

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- 73 -

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--MORPHOLOGICAL AND HISTOCHEMICAL CHARACTERISTICS OF THE LUNGS IN  
ACUTE RENAL INSUFFICIENCY -U-  
AUTHOR--BYALIK, V.L., ROMANENKO, A.M. R

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 57-60

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AUTOPSY, RENAL FAILURE, HISTOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1986/0961

STEP NO--UR/0475/70/000/003/0057/0060

CIRC ACCESSION NO--AP0102900

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102906

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTOPSY STUDIES IN 33 CASES REVEALED CERTAIN MORPHOLOGICAL AND HISTOCHEMICAL PECULIARITIES DEPENDING ON THE DURATION OF ACUTE RENAL INSUFFICIENCY. ONE OBSERVED MARKED CIRCULATORY DISORDERS AND CHANGES OF THE FIBER STRUCTURES OF THE ALVEOLAR SEPTA. THESE CHANGES WERE MANIFESTED BY SWELLING OF THE ARGYROPHIL CAPILLARY MEMBRANES WITH THEIR SUBSEQUENT PARTIAL MELTING. THE BASIS OF THESE CHANGES IS ACCUMULATION OF SOUR NON SULFATED MUCOPOLYSACCHARIDES, WHICH LEADS TO AN INCREASE OF CAPILLARY PERMEABILITY AND DEVELOPMENT OF SWELLING. LATE STAGES OF THE PROCESS WERE CHARACTERIZED BY DEVELOPMENT OF FIBRINOUS PNEUMONIA AND CARNIFICATION.

UNCLASSIFIED

USSR

UDC 541.67

ROMANENKO, E. A., MEGOROV, Yu. P., KORNUTA, P. P. (Institute of Organic Chemistry, USSR Academy of Sciences, Kiev)

"Nuclear Quadrupole Resonance and Characteristics of Structure of Substituted Phosphapyrimidines"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 9, No 5, Sep-Oct 73, pp 635-641

Abstract: The electron structure of a new class of organophosphorus compounds -- phosphapyrimidines -- was studied. Data on the nuclear quadrupole resonance of the  $^{35}\text{Cl}$  nuclei showed a cyclic structure of the molecules and the additive nature of the transmission of the effect of the substituent on the electron density distribution on the atoms of the chlorine group,  $\geq \text{PCl}_5$ . In accordance with the theory of Townes and Daily (J. Chem. Phys. 23: 118 (1955)), the degree of the multiplicity factor and ion formation at the C-Cl bond was evaluated, and the significant effect of the ring N atom on the degree of the multiplicity factor at this bond was found. Analysis of  $^{31}\text{P}$  nuclear quadrupole resonance data indicated that the P=N bond of the ring is somewhat weaker than in triphosphonitrile chloride.

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Alkaloids

USSR

UDC 541.63 + 547.92

GORYAYEV, M. I., IRISMETOV, M. P., and ROMACHENKO, G. K., Institute of Chemical Sciences, Acad. Sc. KazSSR, Alma-Ata

"Modified Steroids. IX. Synthesis of Heterocyclic Derivatives of the Steroid Alkaloid Solasodine"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Khimicheskaya No 1, Jan-Feb 73, pp 70-73

Abstract: To a suspension of sodium methoxide in benzene, ethyl formate was added, followed by 5 $\alpha$ -(5 $\beta$ -, or  $\Delta^4$ )-3-ketosolasodane. After an overnight reaction the product was isolated from benzene to yield 2-hydroxymethylene-5 $\alpha$ -solasodan-3-one, m.p. 219-220°C, and its 5 $\beta$ - and  $\Delta^4$  analog, melting, respectively, at 248-250°C and 212-214°C. These products reacted with hydrazine hydrate followed by hydroxylamine hydrochloride yield (3,2s) pyrazolo-5 $\alpha$ -solasodane, m.p. 238-240° as well as the 5 $\beta$ - and  $\Delta^4$  analog, melting at 295-295° and 311-313° respectively and finally (3,2s)-isoxazolo-5 $\alpha$ -solasodane, the 5 $\beta$ - and  $\Delta^4$  analog, melting at 228-229°, 234-235° and 214-215°, respectively.

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1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--PHOSPHORESCENCE AFTER ELECTROLUMINESCENCE OF SRS, CU AND EU  
PHOSPHORS -U-  
AUTHOR--(02)-GOLOMAN, A.G., ROMANENKO, I.L.  
COUNTRY OF INFO--USSR  
SOURCE--LENINGRAD, OPTIKA I SPEKTROSKOPIYA; MARCH, 1970; PP 502-503  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--PHOSPHORESCENCE, ELECTROLUMINESCENCE, EUROPIUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/0278 STEP NO--UR/0051/70/000/000/0502/0503  
CIPC ACCESSION NO--AP0129511

UNCLASSIFIED



2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129511

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PROLONGED PHOSPHORESCENCE OF EUROPIUM CENTERS AFTER THE ELECTROLUMINESCENCE OF SRS-CU AND EU PHOSPHORS WAS DISCOVERED. THE PHOSPHORESCENCE SPECTRUM AFTER ELECTROPERTURBATION COINCIDES WITH THE SPECTRUM OF ORDINARY PHOSPHORESCENCE AFTER PHOTOPERTURBATION IN THE REGION OF IMPURITY (LAMBDA PERT EQUALS 365 NM) AND FUNDAMENTAL ABSORPTION (LAMBDA PERT EQUALS 253 NM). EXTINGUISHING THE PHOSPHORESCENCE IN THE INITIAL STAGES CONSISTS OF TWO COMPONENTS, EXPOTENTIAL AND HYPERBOLIC, WHILE THE LATER STAGES STRICTLY FOLLOW A HYPERBOLIC LAW.

UNCLASSIFIED

Optics & Spectroscopy

USSR

GOLDMAN, A. G.; ROMANENKO, I. I.

R

"Phosphorescence after Electroluminescence of SrS-Cu and Eu Phosphors"

Leningrad, Optika i Spektroskopiya; March, 1970; pp 502-3

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ABSTRACT: A prolonged phosphorescence of europium centers after the electroluminescence of SrS-Cu and Eu phosphors was discovered. The phosphorescence spectrum after electroperturbation coincides with the spectrum of ordinary phosphorescence after photoperturbation in the region of impurity ( $\lambda_{\text{pert}} = 365 \text{ nm}$ ) and fundamental absorption ( $\lambda_{\text{pert}} = 253 \text{ nm}$ ). Extinguishing the phosphorescence in the initial stages consists of two components -- exponential and hyperbolic -- while the later stages strictly follow a hyperbolic law.

The article includes two figures. There are 5 references.

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USSR

UDC [621.357:621.72.027]:669.3

LAVRENT'YEV, I. F., MIKHAYLOV, L. F., ROMANENKO, I. N.

"Experimental Study of the Effect of the Degree of Purity and Contact Pressure on the Contact Resistance of Flat Copper Surfaces"

V sb. Elektr. razryad v elektrotekhnol. ustanovkakh (Electric Discharge in Electrotechnical Devices -- collection of works), Cheboksary, 1971, pp 93-96 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L341)

Translation: A study was made of the dependence of the contact resistance of flat Cu surfaces on the procedure used in machining them (the surface was machined with a fine sandpaper, a coarse file, or oxidized by chlorine) and the magnitude of the contact pressure for various D. The pressures varied from 0.1 to 4 kg/cm<sup>2</sup>; D reached 50 a/cm<sup>2</sup>. It was demonstrated that in order to insure minimum contact resistance for flat contacts up to 50 cm<sup>2</sup> in area a pressure of 1.5-2 kilogram-force/cm<sup>2</sup> is sufficient. When P = 2 kilogram-force/cm<sup>2</sup>, the mean contact resistance  $\rho \approx 1-1.5$  ohm-cm<sup>2</sup>. For large contact surfaces, special lapping of the surface is required or making the contacts sectional (with each section area  $\leq 40-50$  cm<sup>2</sup>). The contact surfaces must be cleaned to remove oxides.

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USSR

UDC 51

ROMANENKO, I. P.

"Problems of Finding the Optimal Autonomy of Subsystems"

V sb. Detsentralizovan. metody upr. (Decentralized Methods of Control--collection of works), Moscow, 1972, pp 110-116 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V378)

No abstract

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ROMANENKO, N.

(Maj. Gen)

Mil

ROLE OF THE COMMANDER IN TRAINING SUBORDINATES

Article by Maj Gen. Romanenko, Deputy Commander for Rear of Red-Engineer  
far East Military District, Deputy Commander "Teaches His Subordinates"  
Moscow, Pravda, November 20, 1971, No 1763.

More a year thousands of young people pour into the Army. As a rule they are without sufficient life experience, but they are intelligent and are thirsting to learn a lot in military affairs and to study much to become worthy defenders of their Motherland. They master various military trades with persistence and stubbornness. A large number of them will soon become qualified rear service specialists -- drivers, road-builders, pipeline layers, warehouse managers, fuel technicians, repairmen, cooks, and bakers.

But it is not so simple to acquire a skill. During their training period, officers in schools and junior specialists of rear services in schools and courses are given theoretical knowledge and carry out practical skills. However, in daily work in troop units, this frequently turns out to be insufficient. The skills responsibility for completeness of training and instruction is with the deputy commanders and junior specialists at the troop unit level. It is with the deputy commanders for rear services and the chiefs of rear services of units and subunits. Here their enormous life's experience and amassed practical and theoretical knowledge should find application. If they organize the training well and themselves conduct classes with subordinates, then rear service specialists will also work fruitfully in their units and the combat readiness of units and subunits will become higher.

To train subordinates is no easy task. If one analyzes and correlates the experience of many officers who have been awarded in training and educating soldiers, one arrives at the conclusion that not every officer is able to set forth the subject-matter of a topic intelligibly, interestingly, lively, briefly, or answer questions which interest the students. This ability is not gained overnight, not in one day or one week, but through long and stubborn work with people and in the process of thoughtful study of textbooks, manuals, and instructions. It is important to always remember that the demands for professional training of officers-instructors increase with the

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USSR

ROMANENKO, N., Candidate of Medical Sciences

"Biological Ponds"

Moscow, Meditsinskaya Gazeta, 5 May 70, p 3

Abstract: Biological ponds - a series of five or six interconnected artificial bodies of water - are enjoying increasing popularity in the USSR as means of treating the sewage of small inhabited localities, because they simulate the conditions close to those of self-purification of bodies of water. They are also used for the effluents of the food industry, pioneering camps, rest homes, live-stock farms, etc. They are epidemiologically safe, and the water can be used to irrigate commercial and fodder crops. Proper maintenance includes preventing overgrowth at edges of the ponds and periodic removal of sludge, which can either be used as fertilizer or buried 40 to 60 cm underground. The ponds are functional the year round. After the ice melts in the spring, algae are introduced for rapid and efficient purification.

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

741017 THERMAL TREATMENT OF OBJECTS MADE OF REFRACTORY ALLOYS, involving heating, quenching and tempering is characterized in that in order to increase the ultimate strength at bending, by 10-30% the refractory alloys are subjected to ultrasonic treatment during the tempering stage. The proposed method is especially effective in the treatment of objects made of refractory alloys containing 6% and

more by weight of cobalt.  
16.9.66 as 1114589/22-1. N.K. ROMANENKO et al.  
(18.8.69) Bul 13/1.4.69. Class 40b, 40d. Int.Cl.  
C 22c, C22 f.

LD 18

AUTHORS: Romanenko, N. K.; Pogodin-Alekseyev, G. I.; Gavrilov, V. M.; Leshchenko, I. G.; Kartashev, Yu. G. and Novgorodov, A. S.

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1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--ROLE OF COULOMB INTERACTION IN THE RADIATIVE CREATION OF COLOR  
CENTERS IN THALLIUM ACTIVATED POTASSIUM CHLORIDE -U-  
AUTHOR-(03)-ALUKER, E., AKSENOV, C.E., ROMANENKO, N.L.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, FIZ. TEH. ZINAT. SER 1970, (1)  
78-83

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--OPTIC PROPERTY, POTASSIUM CHLORIDE, X RAY IRRADIATION,  
ABSORPTION SPECTRUM, THALLIUM, REACTION KINETICS, HOLE MOBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FKAME--1988/0608

STEP NO--UR/0371/70/000/001/0078/0083

CIRC ACCESSION NO--AP0105591

UNCLASSIFIED



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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105591

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT.

X IRRADN. AND ABSORPTION SPECTRAL DATA ON KCL-TL CRYSTALS, CONTG. 0.1 MOLE PERCENT TL, WERE OBTAINED AT LIQ. N TEMP. THE KINETICS OF COLOR CENTER ACCUMULATION (F, V SUBK, TL AND TL PRIME POSITIVE POSITIVE CENTERS) AT 77DEGREES K AND THE ESTN. OF THE HOLE ENERGY DISTRIBUTION IN THE V SUBK AND TL PRIME POSITIVE POSITIVE CENTERS ARE DISCUSSED. THE ENERGY LIMIT,  $E_{SUBM}$  EQUALS 0.054 EV (600DEGREES K), AT WHICH HOLES CAN BE AUTOLOCALIZED CAN BE INTERPRETED AS THE DEPTH OF A POTENTIAL WELL CORRESPONDING TO AN ANIONIC POINT IN A REGULAR HOLE LATTICE.

UNCLASSIFIED

USSR

UDC 621.311.1.012.5.001.24:681.3

KRYLOV, V. A., LEGKIY, V. A., ROMANENKO, N. P., STEPANCHIKOVA, S. A.

"All-Purpose Automated Program for Digital Computer Calculations of the Short-Circuit Current by the Iteration Method of Nodal Voltages"

V sb. Probl. tekhn. elektrodinamiki (Problems of Technical Electrodynamics -- collection of works), vyp. 25, Kiev, Naukova Dumka Press, 1970, pp 40-44 (from RZh-Eletrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye255)

Translation: An algorithm and programs for calculating all types of short-circuits on the Ural-2 digital computer with automatic alternation of versions are described. The short circuit currents are calculated at each given point by the iteration method of nodal voltages. The results of the studies of convergence of the iteration process are presented. The bibliography has 5 entries. [Institute of Electrodynamics of the Ukrainian SSR Academy of Sciences]

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Refrigeration, Air-Conditioning, Cryogenic

USSR

UDC: 621.541

ROMANENKO, N. T., Doctor of Technical Sciences, Professor, PRUDNIKOV, S. N.,  
Candidate of Technical Sciences, KULIKOV, Yu. F., Engineer, Moscow Higher  
Technical Academy imeni N. E. Bauman

"Pneumatic Damping in Pneumatic Cryogenic Equipment"

Moscow, Izvestiya VUZov: Mashinostroyeniye, No 7, 1973, pp 83-87

Abstract: The paper gives the results of a theoretical and experimental study of pneumatic valve drives aimed at developing drives with a pre-determined law of speed variation and actuation time. It is shown that when special deceleration devices are used it is possible to reduce the speed of valve seating and to obtain the proper actuation time. Analytical expressions are found for approximate determination of the speed of the pneumodrive piston.

USSR

UDC 532.517.4

ROMANENKO, P. N., KALMYKOV, V. G.

"Distribution of Tangential Stresses in a Non-compressible Turbulent Boundary Layer"

Minsk, Inzhenerno-Fizicheskii Zhurnal, Vol. 20, No. 4, Apr. 71, p. 666-673.

Abstract: An isothermal turbulent boundary layer with positive pressure gradient is studied. A hot-wire anemometer is used to investigate turbulence. Good approximations of the distribution of shear stress in a turbulent boundary layer with positive pressure gradient are obtained on the basis of measurement of the turbulent shear stress.

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